

## Abstract

Methods and apparatus for scaling soft values as part of an error correction decoding process are described. Accurate decoding depends on use of the appropriate scale factor. Selection and use of the scale factor to scale soft values is designed to improve and/or optimize decoder performance without the need for prior knowledge of the correct scale factor or the actual channel conditions at the time the signal from which the soft values were obtained was transmitted through a communications channel. The techniques of the present invention assume that the soft values to be processed were transmitted through a communications channel having a quality that can be accurately described by a channel quality value. A scale factor is determined from the distribution of soft values to be scaled and an assumption that the channel through which they were transmitted was of the quality corresponding to a preselected channel quality value.